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**Subject** Traffic and Transport Expert Witness Conclave – Joint Statement

**Date** 16 April 2021

**Job No/Ref**

254639-00

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# 1 Traffic and Transport Expert Witness Conclave Overview

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## 1.1 Project

Kalbar Operations Pty Ltd proposes to develop the Fingerboards Mineral Sands Project (Fingerboards Project) which is located approximately 20 kilometres north-west of Bairnsdale in East Gippsland, Victoria. The environment effects statement (EES), was released for public comment on Thursday 3 September to Thursday 29 October 2020.

## 1.2 Background and Attendees

Expert evidence in relation to the Fingerboards Project was provided in early February 2021. This report has been prepared in response to the Inquiry and Advisory Committee (IAC) directions 8 to 22 dated 19 February 2021 that direct experts to meet to identify and discuss the key issues, facts and assumptions relevant to these issues for the Fingerboards Project.

This report has been prepared by Paul Carter of Arup Pty Ltd (Arup) and Stephen Hunt of Ratio Consultants Pty Ltd (Ratio) and considers the traffic and transport impacts from the Fingerboards Project.

The report has been prepared following a conclave held on 12 April 2021 and on 15 April 2021. The conclave was attended by the following experts:

- Paul Carter, Arup engaged by Kalbar Operations Pty Ltd.
- Stephen Hunt, Ratio engaged by East Gippsland Shire Council.

The conclave was also attended by the following observers:

- Chris Padovan, Department of Transport.
- Paris Dickson, Department of Transport.
- Michael Mattingly, Department of Transport (12 April 2021 only).

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### 1.3 Scope of the Traffic and Transport Conclave

The publicly exhibited EES and the expert evidence referenced above has centred on three alternative options for product transport:

- Pre-Avon River bridge: to Maryvale and Port Anthony or Barry Beach Marine Terminal;
- Post-Avon River bridge – Option 1: to a new Fernbank East rail siding; and
- Post-Avon River bridge – Option 2: to Bairnsdale rail siding.

The preferred transport option identified by Kalbar is Post Avon River Bridge – Option 1 however, the alternative options remain being considered in the EES. Accordingly, the focus of the conclave was on the preferred option primarily but also included discussion of the two alternatives.

As highlighted above, the traffic and transport conclave has focused on the transport safety and network performance impacts associated with the project. There are a number of separate but related issues mostly associated with the proposed road diversions. This includes but is not limited to land, planning and environmental impacts and consideration of ground conditions – these items are assumed to be captured as part of the broader EES process. Also, it is noted that road diversion designs discussed in the conclave have been prepared by CrossCo Consulting Pty Ltd (CrossCo) on behalf of Kalbar as documented in the submission to the IAC on 18 January 2021. CrossCo did not form part of the conclave.

### 1.4 Expert Reports

This report is with particular reference to the traffic and transport assessment and expert reports outlined below.

- Traffic and Transport Impact Assessment dated 9 April 2020 prepared by Arup - forming Appendix A012 to the publicly exhibited EES.

Mr Carter was briefed by White and Case on behalf of Kalbar Operations Pty Ltd and produced the following reports:

- Expert Witness Statement dated 2 February 2021.
- Supplementary Expert Witness Statement dated 8 February 2021.

Mr Hunt was briefed by Planology on behalf of East Gippsland Shire Council and produced the following reports:

- Traffic Engineering Expert Evidence dated 1 February 2021.

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## 2 Key Issues and Facts or Opinions of Agreement and Disagreement

We have developed the following table which summarises the key points of agreement and disagreement on the issues discussed in previous parts of this report. The report references listed refer to our expert evidence statements Paul Carter (Arup) and Stephen Hunt (Ratio).

ID	Category	Report references	Issue	Status	Discussion
1	Study process & methodology	Arup 3.2	The adopted study process and methodology is appropriate.	Agreed	We agree that the methodology generally satisfies the requirements of the EES.
2	Existing conditions data	Ratio 6.1.9 Refer to additional counts – Arup 4.3.1	The traffic data used in the assessment is appropriate for the purpose of the EES.	Disagree	<p>SH acknowledged additional data referenced in PC evidence statement however considers that, if Option 2 is to be retained, even as an interim haulage route, the following updated existing data should be collected, forming the basis of an updated TTIA:</p> <p>7 day classified tube counts on all potential haulage roads, identifying hourly volumes and traffic composition as follows:</p> <ul style="list-style-type: none"><li>• Fernbank-Glenaladale Road, south of Bairnsdale Dargo Road;</li><li>• Bairnsdale-Dargo Road at Walpa.</li><li>• Lindenow-Glenaladale Road, at Lindenow South.</li><li>• Racecourse Road east of Princes Highway.</li><li>• Forge Creek Road, north of Racecourse Road.</li><li>• Collins Street, south of Main Street.</li><li>• Bosworth Road at entry to rail siding.</li></ul> <p>Two-hour turning movement counts during AM and PM weekday allowing existing peak hour volumes to be ascertained at the following locations:</p> <ul style="list-style-type: none"><li>• Fernbank Glenaladale Road / Bairnsdale-Dago Road.</li><li>• Bairnsdale Dargo Road / Lindenow-Glenaladale Road.</li><li>• Princes Highway / Lindenow-Glenaladale Road.</li><li>• Princes Highway / Racecourse Road.</li><li>• Princes Highway / Bairnsdale-Dargo Road.</li><li>• Main Street / Collins Street.</li></ul>

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					<p>PC noted that the assessment draws on publicly available information with additional counts undertaken in key locations as outlined in the TTIA. The sources of data are documented in the TTIA and include:</p> <ul style="list-style-type: none"><li>• Declared Roads: Hourly data from the VicRoads data portal supplemented with 7 day classified counts along Lindenow-Glenaladale Road in Lindenow South and Bairnsdale Dargo Road in Walpa. School holiday and non-school holiday data also reviewed.</li><li>• Local Roads: Daily data sourced from the relevant local government authorities and growth applied to represent 2017 volumes.</li><li>• Intersections: Built up areas around Bairnsdale has utilised hourly data from the VicRoads data portal combined with 15 min traffic surveys during peak periods to understand turning proportions. Rural areas surrounding Lindenow has utilised hourly data from the VicRoads data portal combined with assumptions as per TTIA.</li></ul> <p>PC considers that the adopted approach is appropriate for assessing the impacts for the purpose of the EES and highlights that the identified impacts associated with traffic movements are very low. PC noted that there may be benefit in collecting additional data beyond the EES should the project proceed to inform the design of mitigating measures for the option that is pursued. This would occur following a stabilisation of travel behaviour post COVID-19.</p>
3	Transport scenarios	Ratio 3.3	Route options for transport of product.	Agreed	<p>We agree that, on the basis of transport impacts, the preferred option is Option 1, understanding that other environmental impacts being considered in the EES may also influence the finally adopted transport route).</p> <p>We agree that Option 2 should only be considered either as:</p> <ul style="list-style-type: none"><li>• An interim option to allow haulage of concentrate to Bairnsdale until Ferndale East siding can be constructed, or</li><li>• The preferred option if the construction of the Ferndale East siding and internal haulage road is not achievable for other than transport reasons.</li></ul> <p>It was agreed that clarity as to the need for interim haulage to Bairnsdale, as per Option 2, was likely to be required in any staged establishment of the site and that the specifics of any contemplated staged arrangement may impact the recommended mitigations.</p> <p>We agree that the Pre-Avon River Bridge Option should acknowledge that rail capacity to allow transport of concentrate has now been established. It was agreed that this Option should only be considered if it was determined that, for other than transport reasons, movement of product via either Option 1 or Option 2 is not feasible.</p>

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4	Traffic generation	Ratio Table 4.1, Item 4, 6.1.10 Refer to additional analysis – Arup 4.3.4	The traffic generation estimate during construction is suitable considering the potential overlap of the construction the rail siding, haulage road and project site.	Generally agreed	SH is satisfied that the estimates of traffic generation provide a conservative but appropriate basis for assessment of additional traffic movements.
5	Traffic generation	Ratio Table 4.1, Items 4, 5	The traffic generation estimates during operations are suitable.	Generally agreed	As above for item 4.
6	Traffic generation and distribution	Ratio 3.5.17	The operations phase should be the primary focus of the assessment.	Generally agreed	<p>PC considers that the operation phase is critical given that significant background growth has been applied to assess the project 10 years after opening and also the regular movement of B-Double vehicles associated with the operation phase over a 20-year period.</p> <p>PC noted that a traffic management plan would be expected to be prepared associated with the construction phase to manage temporary and short-term traffic impacts. In the event that Option 1 proceeds, the traffic performance issues associated with Option 1 construction phase would be less than or comparable to that already assessed which shows very low levels of impact.</p> <p>SH is satisfied on approach, but considers that additional and updated information on haulage movements is required in conjunction with preparation of an updated TTIA to identify relative increases, including estimates of:</p> <ul style="list-style-type: none"><li>• Daily movements.</li><li>• Hourly movements during peak periods on the road network.</li><li>• Hourly movements during school drop off pick up times (and the feasibility of restricting movements during those times) should Option 2 be required in the interim.</li><li>• Hourly movements between 7pm and 7am.</li></ul>

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7	Intersection capacity analysis approach	Ratio Table 4.1, Item 7 Refer to updated analysis – Arup 4.3.1, 4.4.16	Intersection analysis methodology including peak periods and analysis tools are adequate.	Generally Agreed	<p>SH considers that more comprehensive existing conditions base is required (as above) to allow a complete and consistent understanding of future conditions to be established. SH considers a consistent base is required for transparent understanding of future conditions, including SIDRA analysis at key intersections.</p> <p>PC considers that the data and tools used for the assessment are satisfactory and provides an appropriate understanding of the traffic operational impacts for the purpose of the EES. PC noted that it is highly unlikely that any additional data collection or additional analysis will change the findings of the assessment and that a more detailed analysis will likely show an improved intersection performance over what is documented in the TTIA.</p> <p>SH considers that, while it is unlikely that additional data as recommended will materially impact capacity analysis it is required in order to understand the relative environmental impacts of additional haulage traffic and to assist assessment as to the extent of mitigating treatments being considered.</p>
8	Turn warrants assessment	Ratio Table 4.1, Item 8 Refer to additional analysis – Arup 4.3.1, 4.4.16	Turn lane warrants assessments are adequate.	Agreed	<p>We agree that the correct references have been used.</p> <p>SH considers that the existing conditions data should be updated (as above).</p> <p>PC considers the existing data to be satisfactory for identifying the impacts in the EES (as above).</p> <p>We agree that while additional data collection provides a consistent base for the assessment it would be unlikely to change the outcomes or findings of the assessment.</p>
9	Road alignment plans	Ratio Table 4.1, Item 9	The level of detail that is provided for the road diversions are suitable for the purpose of the EES.	Agreed	<p>We agree that the road diversion concept plans provided to the IAC on 18 January 2021 have an appropriate level of horizontal geometry detail for the purpose of the EES.</p> <p>We agree that the plans should include vertical geometry to understand the safety and performance of the realigned roads.</p> <p>We agree that similar levels of detail should be produced for the proposed intersection treatments on Princes Highway in order to understand the functionality and impact to potential constraints (eg. land boundaries, environment).</p>

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10	Road alignment plans	Ratio Table 4.1, Item 10, 5.2.6, 6.1.15 Arup 4.3.5	Intersection spacing, the Fingerboards intersection control and the degree to which this can be resolved with further design.	Agreed	<p>We agree that the spacing of intersections needs refinement relative to Austroads and VicRoads guidelines and in consultation with the responsible authorities.</p> <p>We agree that providing vertical alignment drawings for the proposed diversions are important in understanding the safety of the proposed alignments.</p> <p>SH considers that the roundabout at the revised Fingerboards intersection may not be required as a result of the proposed reconfiguration of the intersection to a T-junction.</p> <p>We agree that further design of the system of intersections is needed to determine if the proposed roundabout control is appropriate including a review of geometry of Bairnsdale-Dargo Road.</p> <p>We agree that there are a number of additional refinements relating to the road diversion designs including the use of Fernbank-Glenaladale Road by heavy vehicles during operations as well as a further review of design speeds and geometry.</p> <p>We agree that the improvements and refinements that have been highlighted in our respective evidence and summarised above should generally be adequate to subsequently allow the more detailed safety and traffic performance matters to be resolved post a decision on the EES. This would occur through the typical design and approvals process and with engagement with the relevant responsible road authority. This assumes that there is no land, planning and environment constraints that need to be addressed prior.</p>
11	Road alignment plans	Ratio Table 4.1, Item 10, 5.2.7, 6.1.16	Traffic signals or grade separation of private haulage road.	Disagree	<p>SH considers that grade separation of the intersection of the private haulage road and Fernbank-Glenaladale Road intersection appears to be feasible, noting that similar grade separation is proposed at intersections of internal roads and Bairnsdale Dargo Road. Grade separation is considered preferable from a safety and movement perspective.</p> <p>PC considers that traffic signals and supporting signage, boom gates on the haul road, an operational overlay as well as a change in speed limit is an appropriate treatment for the scale of impact.</p>
12	Road realignment plans	Arup 4.1.2.3	Traffic delay impacts of the proposed road diversion are not significant impacts.	Agreed	Relative delays as a result of the proposed diversions (relating to additional travel distance) are expected to be minor and are acceptable.

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13	Intersection treatments Option 2	Ratio Table 4.1, Item 13, 3.6.20 Arup 4.4.16	Functional designs should be prepared for the intersection treatments and diverted roads.	Agreed	As above, we agree that concept plans should be produced for the proposed intersection treatments on Princes Highway and proposed diversions of existing roads in order to understand safety and feasibility (eg. land boundaries, environment).
14	Intersection treatments Option 2	Ratio Table 4.1, Item 14, 3.6.22 Arup 4.4.16	Roundabouts proposed for the intersections on Princes Highway are an appropriate treatment for the risks and impacts identified.	Disagree	<p>SH does not support the introduction of roundabouts on the Princes Highway over the 20-year operation period given it introduces delays from comparatively low volumes of traffic from minor roads and is contrary to the established road hierarchy.</p> <p>PC supports the introduction of roundabouts on Princes Highway over the 20-year operation period to manage the safety of heavy vehicles turning to and from the Princes Highway with a primary focus on reducing the speed of vehicles at the point of conflict and given the proposed 24-hour operation. PC noted that there are also secondary benefits in that there would be reduced delays for the community during busy holiday periods.</p> <p>We agree that clarity is required around any potential staging that is pursued by the project. We agree that the duration (eg. short-term) of any interim operation of Option 2 would influence the suitability of roundabouts on the Princes Highway.</p> <p>We agree that the type and extent of mitigating works at intersections to Princes Highway will be subject to assessment and approval by DoT.</p>
15	Haulage route Option 2	Arup 4.1.2.4	Should Option 2 be pursued, Bairnsdale-Dargo Road and Lindenow-Glenaladale Road (incorporating the recommended mitigation measures) is the best option to access the Princes Highway.	Agreed	SH noted that Option 2 is not preferred but if required either as an interim option or as in the longer term, the route through to Lindenow South is acceptable subject to appropriate mitigation treatments including restriction on heavy vehicle movements at school drop off / pick up times.



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16	Haulage route Option 2	Arup 4.1.2.4	Should Option 2 be pursued, Racecourse Road (incorporating the recommended mitigation measures) is the best option for accessing Bairnsdale Rail siding when compared to a route via Collins Street.	Disagree	SH noted that in the event that Option 1 is not feasible the access route to connect to the Bairnsdale rail siding from Princes Highway should be via Collins Street, an existing approved b-double route. PC notes that the Collins Street route, while viable, was not preferred over Racecourse Road given the need to travel through two additional level crossings and travel into the built-up area of Bairnsdale. However, ultimately any use of Racecourse Road would require Council approval and if this is not supported, the use of Collins Street would need to be further reviewed should this alternative product transport option be pursued.
17	Safety around schools	Arup 4.1.2.3	The risk of safety around schools is suitably mitigated by the proposal to avoid school drop and pick-up times.	Agreed	We agree that the risk around schools can be appropriately mitigated including through the restriction of heavy vehicle movements during school drop off and pick up times through Lindenow South and along Main Street should the Collins Street route be adopted in association with Option 2.
18	Oversize and Overmass Loads	Arup 4.1.2.3	Impact of over-dimensional loads is not significant and should be addressed through subsequent standard approvals processes.	Agreed	PC noted that the over-dimensional loads are expected to be a low number of movements as per the TTIA. There is agreement that the standard requirements and approvals process for over-dimensional loads would mitigate the impacts relating to these movements.
19	Consideration of amenity impacts	Ratio Table 4.1, Item 11	The amenity considerations as relevant to traffic and transport have been captured adequately in the EES overall.	Disagree	SH considers that more information is required on existing and future movements to understand the relative increases in truck movements and consequential amenity impacts. PC considers that the amenity aspects of the project and transport options are best captured within the overall EES and associated specialist studies (e.g. noise and vibration, air quality, social impact assessments).
20	Pavements impacts	Ratio Table 4.1, Item 12 Arup 4.1.2.5	The pavement impacts have been identified and is appropriate for the purpose of the EES.	Agreed	

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21	Monitoring and Asset Protection Plan	Arup 4.1.2.5	The development of a monitoring and asset protection plan agreed with the responsible authorities would mitigate the anticipated impacts to C-Class and local roads.	Agreed	PC noted that this applies to the existing pavements and that the pavement design requirements for road diversions would be subject to a separate design approvals process with the relevant responsible authority.
22	Transport Operational Management Plan	Arup 4.3.2	The development of a Transport Operational Management Plan to meet the requirements of the NHVR mitigates the impacts relating to managing heavy vehicle driver safety.	Agreed	

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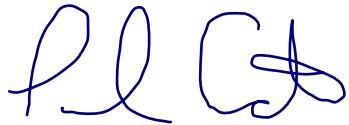
## 2.1 Technical Standards or Criteria

Not discussed.

## 2.2 Agreed Changes to the Environmental Management Framework

Not discussed.

By signing below, we endorse that this document is a true summary of the discussion held and the points agreed at the conclave.



16 April 2021

\_\_\_\_\_  
Paul Carter, Arup

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Dated



16 April 2021

\_\_\_\_\_  
Stephen Hunt, Ratio

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Dated